AMENDMENTS TO THE CLAIMS

1. (Currently amended) A signal processing method comprising:

an overwriting step of overwriting ~~an~~ a LUT written into a table storage area with another LUT, in accordance with a content of each of a plurality of processes executed to a first signal or a second signal; and

a synthesizing step of performing a process corresponding to a content of the another LUT for the first signal or the second signal each time the LUT in the table storage area is overwritten and synthesizing the processed first signal and the second processed signal.

2. (Previously presented) The signal processing method according to claim 1, wherein the synthesizing step comprises:

a step of writing a first LUT for gray-scale correction of the first signal into the table storage area;

a step of performing gray-scale correction on the first signal by using the first LUT for gray-scale correction written into the table storage area;

a step of overwriting the table storage area where the first LUT for gray-scale correction is overwritten with a second LUT for gray-scale correction of the second signal;

a step of performing gray-scale correction on the second signal by using the second LUT for gray-scale correction written into the table storage area;

a step of overwriting the table storage area where the second LUT for gray-scale correction is overwritten with a weighting LUT for signal synthesis; and

a step of synthesizing the first signal and the second signal by using the weighting LUT for signal synthesis written into the table storage area.

3. (Currently amended) A signal processor circuit comprising:

a table storage area for storing ~~an~~ a LUT;

a table overwriter for overwriting the LUT written into the table storage area with another LUT in accordance with a content of each of a plurality of processes executed to a first signal or a second signal; and

an arithmetic operator for performing arithmetic operation on a first digital signal or a second digital signal based on the LUT written into the table storage area each time ~~an~~ a LUT is written into the table storage area, and synthesizing the first digital signal and the second digital signal.

4. (Currently amended) The signal processor circuit according to claim 3,

wherein the arithmetic operator performs gray-scale correction on the first digital signal by using ~~an~~ a LUT for gray-scale correction of the first digital signal written into the table storage area,

performs gray-scale correction on the second signal by using ~~an~~ a LUT for gray-scale correction of the second digital signal written into said table storage area, and

synthesizes the first digital signal and the second digital signal by using a weighting LUT for signal synthesis written into the table storage area.

5. (Currently amended) Imaging apparatus comprising:

an imaging element, which includes a plurality of first photoreceptor elements and second photoreceptor elements respectively each having a first photoreceptive area and a second photoreceptive area having different sensitivities;

an A/D converter circuit, which performs A/D conversion on a first analog signal including a plurality of output signals output from the first photoreceptor devices and a second analog signal including a plurality of output signals output from the second photoreceptor devices to generate a first digital signal and a second digital signal; and

a signal processor circuit, which performs a plurality of processes on the first digital signal and the second digital signal to generate image data;

wherein the signal processor circuit comprises:

a table storage area for storing ~~an~~ a LUT;

a table overwriter for overwriting ~~an~~ the LUT written into the table storage area with another LUT in accordance with a content of each of a plurality of processes executed to a first signal or a second signal; and

an arithmetic operator for performing arithmetic operation on the first digital signal or the second digital signal based on the LUT written into the table storage area each time ~~an~~ a LUT is written into the table storage area, and synthesizing the first digital signal and the second digital signal.

6. (Previously presented) The imaging apparatus according to claim 5, comprising

a controller for generating the LUT based on the first digital signal or the second digital signal, and

a memory for storing the LUT generated by the controller, wherein the table overwriter overwrites the LUT written into the table storage area with the stored LUT.

6. (Currently amended) The imaging apparatus according to claim 5 or 6, wherein the LUTs are ~~an~~ a LUT for gray-scale correction of the first digital signal, ~~an~~ a LUT for gray-scale correction of the second digital signal and a weighting LUT for signal synthesis.

8. (Currently amended) The imaging apparatus according to claim 5 or 6, wherein the signal processor circuit performs gray-scale correction on the first digital signal by using ~~an~~ a LUT for gray-scale correction of the first digital signal written into the table storage area,

performs gray-scale correction on the second signal by using ~~an~~ a LUT for gray-scale correction of the second digital signal written into the table storage area, and

synthesizes the first digital signal and the second digital signal by using a weighting LUT for signal synthesis written into the table storage area.

9. (New) The signal processor circuit according to claim 3, further comprising:

the table overwriter writing a first LUT for gray-scale correction of the first signal into the table storage area, performing gray-scale correction on the first signal by using the first LUT

for gray-scale correction written into the table storage area, overwriting the table storage area where the first LUT for gray-scale correction is overwritten with a second LUT for gray-scale correction of the second signal, and performing gray-scale correction on the second signal by using the second LUT-for gray-scale correction written into the table storage area; and

the arithmetic operator overwriting the table storage area where the second LUT for gray-scale correction is overwritten with a weighting LUT for signal synthesis, and synthesizing the first signal and the second signal by using the weighting LUT-for signal synthesis written into the table storage area.

10. (New) The imaging apparatus according to claim 5, further comprising:

the table overwriter writing a first LUT for gray-scale correction of the first signal into the table storage area, performing gray-scale correction on the first signal by using the first LUT for gray-scale correction written into the table storage area, overwriting the table storage area where the first LUT for gray-scale correction is overwritten with a second LUT for gray-scale correction of the second signal, and performing gray-scale correction on the second signal by using the second LUT-for gray-scale correction written into the table storage area; and

the arithmetic operator overwriting the table storage area where the second LUT for gray-scale correction is overwritten with a weighting LUT for signal synthesis, and synthesizing the first signal and the second signal by using the weighting LUT-for signal synthesis written into the table storage area.

11. (New) The signal processor circuit according to claim 3, wherein the another LUT was adaptively obtained through arithmetic operation based on a user setting.

12. (New) The signal processor circuit according to claim 3, wherein the another LUT was adaptively obtained through arithmetic operation based on a histogram of a digital signal.

13. (New) The imaging apparatus according to claim 5, wherein the another LUT was adaptively obtained through arithmetic operation based on a user setting.

14. (New) The imaging apparatus according to claim 5, wherein the another LUT was adaptively obtained through arithmetic operation based on a histogram of a digital signal.

15. (New) The signal processing method according to claim 1, wherein the another LUT was previously stored in a memory.

16. (Currently amended) The signal processor circuit according to claim 3, wherein the another LUT was previously stored in a memory.

17. (New) The imaging apparatus according to claim 5, wherein the another LUT was previously stored in a memory.